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(54) **MATTRESS PAD**

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MATELAS

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## Description

### Field of the invention

[0001] The invention relates to a mattress pad with a quilted mattress cover and a removable core.

### Background of the invention and brief description of the invention

[0002] The human body produces a lot of moisture in the course of a night's sleep. This can be up to 1 litre of water. In most mattress pads, the moisture cannot be transported away laterally to any great extent and so the moisture remains and accumulates under the sleeper. The pad then takes a long time to dry out in the morning. Known mattress pads do not usually have a removable core and, if they do, the core is not washable.

[0003] EP 1 775 362 A1 describes a thick foam mattress comprising a bonded unit consisting of two outer layers and monofilaments extending between the outer layers.

CH596 803 A5 describes a foam mattress with two cushion core layers placed one on top of the other and inserted in a closable case

The aim of the invention is to provide a mattress pad which is easily washable and hygienic and leads to fewer mites while also providing improved comfort.

[0004] The above mentioned technical problem is solved by a mattress pad constructed according to claim 1.

### Brief description of the drawings

[0005]

**Figure 1** is a section through a mattress pad according to the invention.

**Figure 2** is an enlarged detail from Figure 1.

### Description of illustrated and preferred embodiment of the invention

[0006] Figure 1 shows a core consisting of two units 11, 12. The unit 11 is shown separately in Figure 2. It has two outer layers 13, 14 and vertical monofilaments 10 are fixed between the outer layers. The monofilaments may consist of polyester or polyamide and may in principle be fishing gut woven into the outer layers and extending to and fro between them, i.e. the monofilaments extend vertically between the outer layers. The monofilaments are arranged sparsely and occupy only a small percentage of the surface. The outer layers 13, 14 allow for both the transportation of moisture and the passage of air. The unit 11 is in principle known per se from EP 1 775 362. Each unit is reinforced at the edge, as will be seen most clearly from Figure 2, in that the edge 24 of the unit is compressed and fused so that it is dimension-

ally stable. The edge moreover has a sewn-on trim 25 and an adhesive fastening strip 23 of the Velcro type. The two units 11, 12 are fixed together by means of this Velcro strip 23. The core made up of the two units 11, 12 therefore has a dimensionally stable edge. Instead of reinforcing the edges of each individual unit 11, 12, they can be compressed and fused together so that the two units 11, 12 will not come apart.

[0007] The units 11, 12 are inserted into a casing, i.e. a mattress cover, consisting of two quilted layers 16, 17 joined together by one circumferential side 19. The quilted layers 16, 17 consist of two top layers of material 20, 21 with a filling 22 in between. The filling consists of fibres, e.g. polyester fibres or silk fibres. The casing has a zip fastener along its side 19. The side 19 is woven as a net and thus has good ventilating properties.

[0008] The quilted layers 16, 17 may be different so as to give one warm and one cool side. They may both be of different thicknesses and have a different filling and material. The two units 11, 12 of the core may have monofilaments of different diameters so that one unit is firmer than the other. The units may also have different thicknesses. When constructing a mattress pad, it is possible to have, e.g. three different units with different degrees of firmness to choose from and then to make up a mattress pad with the desired firmness and thickness. By selecting units with different degrees of firmness, it is possible to obtain a mattress pad with different properties depending on the side selected to go on the top. With a few units for the core and a few mattress covers, it is thus possible to provide mattress pads with a wide variation of properties. A suitable thickness for each unit of the core is 10-25 mm and the thickness of the quilt may advantageously also be 10-25 mm. By providing several thin units in the core, it is possible to achieve better comfort than in the case of one single thicker unit.

[0009] The upper quilt 16 takes a lot of moisture from the body and when the sleeper moves so that the core 11, 12 moves, the thin quilt can dry out relative to the core, which does not offer any resistance to the lateral movement of air. Each movement by the sleeper results in moist air in the core being moved laterally. The mattress pad does not transport moisture down to the underlying mattress to the same extent as conventional mattresses and the bed dries out quickly in the morning. It is also conceivable for there to be an airtight layer on the lower quilt. The layer below the core, i.e. the quilt 17, then acts as a moisture absorbent allowing for drying out, but not allowing moisture to penetrate down to the underlying mattress.

[0010] The construction of the core 11, 12 also allows for the connection of a fan for blowing or sucking air laterally through the core. There is then an airtight side 19 on the mattress cover and a connection (not shown) is provided on the side 19 for the fan air. The surfaces of the elements do not have to be airtight as it is an advantage for the quilt also be ventilated. The ventilating air can be pre-heated or pre-cooled and the ventilating unit

can be mounted on the underside of the bed. The ventilating air may be treated, e.g. cooled or heated, to provide comfort. In a hospital environment, the air can be enriched with oxygen, e.g. for burns patients in order to improve healing.

**[0011]** As a result of the fact that the mattress ventilates away moisture, there is no suitable environment for mites and as it does not in itself contain any allergens and is easily washable, it is hygienic and suitable for persons with allergies. The core of the mattress pad can be removed from the mattress cover in a simple manner and the cover washed in the washing machine. The core can be washed in a simple manner in the shower. There is therefore no harm done if a young child has an accident. The entire mattress is simply washed and it then dries quickly.

### Claims

1. Mattress pad with a quilted mattress cover (16,17,19) and a removable core (11,12), the core comprises two or more units (11,12), each unit comprises two outer layers (13,14) and monofilaments (10) extending between the outer layers, **characterised in that** the core (11,12) is reinforced at the edge so that it is dimensionally stable, wherein the edge (24) of each unit is compressed together and/or fused together, and the edges (24) of the outer layers have Velcro strips (25) by means of which two units (11,12) arranged one on top of the other are fixed together.
2. Mattress pad according to claim 1, **characterised in that** each of the core units has a thickness of 10-25 mm.
3. Mattress pad according to anyone of the preceding claims, **characterised in that** one of the units (11, 12) of the core has monofilaments having a larger diameter than another of the units (11,12).
4. Mattress pad according to any one of the preceding claims, **characterised in that** the circumferential side (19) comprises a woven net.

### Patentansprüche

1. Auflagematratze mit einem gesteppten Matratzenbezug (16, 17, 19) und einem herausnehmbaren Kern (11, 12), wobei der Kern zwei oder mehr Einheiten (11, 12) umfasst, wobei jede Einheit zwei äußere Schichten (13, 14) und zwischen den äußeren Schichten verlaufende Monofilamente (10) umfasst, **dadurch gekennzeichnet, dass** der Kern (11, 12) am Rand verstärkt ist, sodass er formbeständig ist, wobei der Rand (24) jeder Einheit zusammenge-

drückt und/oder zusammengeschweißt ist, und die Ränder (24) der äußeren Schichten Klettbänder (25) aufweisen, mit denen zwei übereinander angeordnete Einheiten (11, 12) aneinander befestigt sind.

2. Auflagematratze nach Anspruch 1, **dadurch gekennzeichnet, dass** jede der Kerneinheiten eine Dicke von 10 bis 25 mm aufweist.
3. Auflagematratze nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** eine der Einheiten (11, 12) des Kerns Monofilamente mit einem größeren Durchmesser als eine weitere der Einheiten (11, 12) aufweist.
4. Auflagematratze nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Umfangsseite (19) ein Netzgewebe umfasst.

### Revendications

1. Surmatelas comprenant une housse de matelas piquée (16, 17, 19) et un noyau amovible (11, 12), le noyau comprenant deux unités (11, 12) ou plus, chaque unité comprenant deux couches extérieures (13, 14) et des monofilaments (10) s'étendant entre les couches extérieures, **caractérisé en ce que** le noyau (11, 12) est renforcé au bord de sorte qu'il est stable sur le plan de ses dimensions, le bord (24) de chaque unité étant comprimé et/ou fondu sur lui-même, et les bords (24) des couches extérieures possèdent des bandes Velcro (25) au moyen desquelles deux unités (11, 12) disposées l'une sur l'autre sont fixées l'une à l'autre.
2. Surmatelas selon la revendication 1, **caractérisé en ce que** chacune des unités de noyau présente une épaisseur de 10 à 25 mm.
3. Surmatelas selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'**une des unités (11, 12) du noyau comporte des monofilaments présentant un diamètre supérieur à une autre des unités (11, 12).
4. Surmatelas selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le côté périphérique (19) comprend un filet tissé.

Fig 1

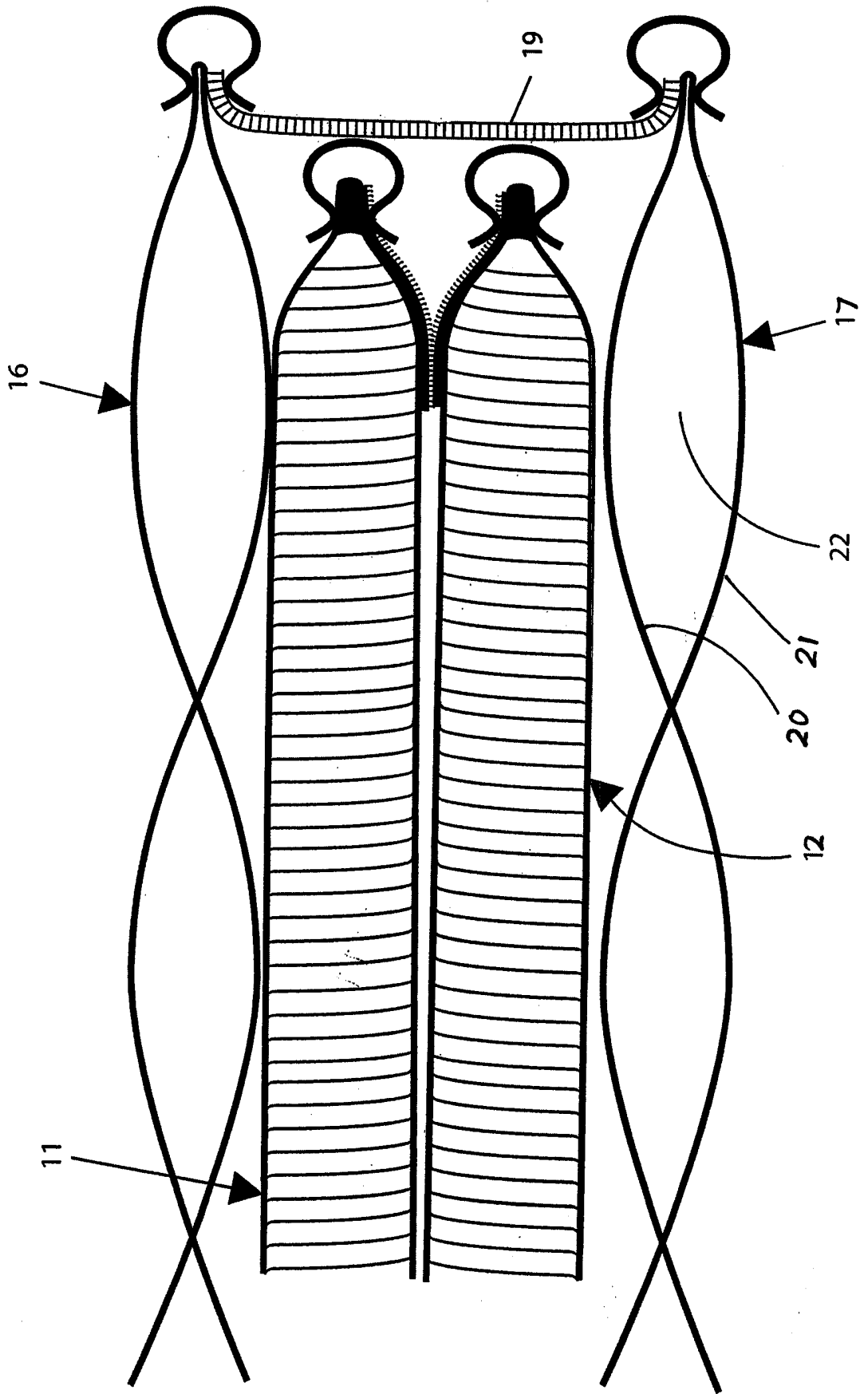
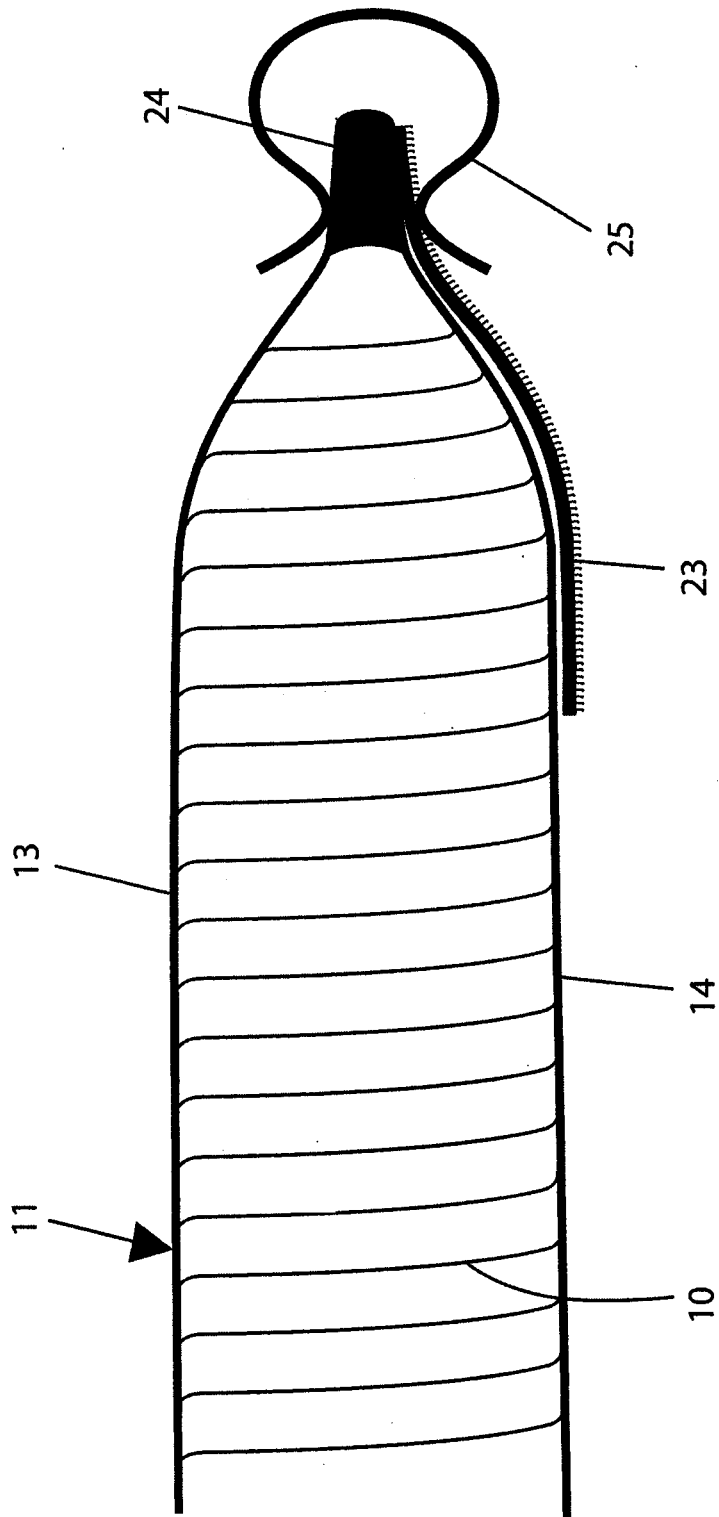


Fig 2



**REFERENCES CITED IN THE DESCRIPTION**

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